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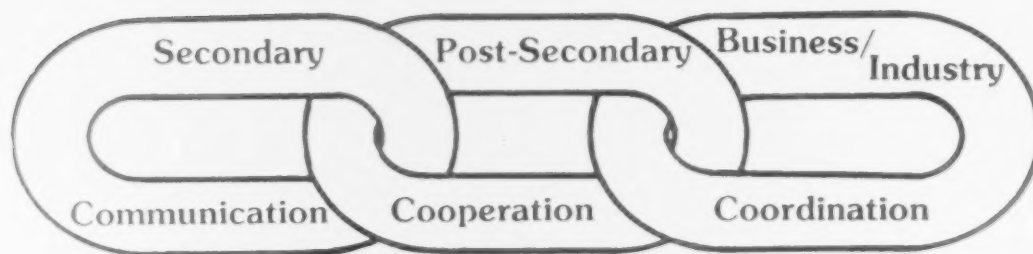
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ABSTRACT

This report is a summary of presentations and recommendations made by representatives of area public school districts, postsecondary institutions, and businesses who met at San Juan College to engage in an extended discussion about the articulation of mathematics and language arts instruction at secondary and postsecondary institutions in northwestern New Mexico. Each school was represented by a team consisting of a counselor or administrator, an English teacher, and a mathematics teacher. The 3-day conference resulted in a series of recommendations and action plans. Math teachers recommended the following: a statewide articulation conference to revise state-mandated math competencies; testing for math skills competencies in the eighth grade; an increase in area schools' access to computer information network systems; and cataloging and making available math teaching resources at a central location. English teachers recommended the following: establishing an ongoing dialogue among educators, grades K through 14, in English and language arts; identifying outside resources and encouraging grant-writing workshops for English teachers; and using portfolios to assess the language arts competencies of students. Administrators and counselors recommended an increase in dialogue between business and education and the use of a mentoring system to help "at-risk" students. Descriptions of and reports from the conference workshops, lists of proposed actions to be undertaken at each educational level by conference participants, the conference program, and a list of participants are included. (JMC)

NORTHWEST REGIONAL ARTICULATION CONFERENCE



Forging Links for the Future

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November 8-10, 1990

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FORGING LINKS FOR THE FUTURE
THE NORTHWEST REGIONAL ARTICULATION CONFERENCE

INTRODUCTION

CONFERENCE OVERVIEW

Seventy (70) participants met together at Farmington's San Juan College on November 8-10 to engage in an extended conversation about the articulation of Mathematics and Language Arts instruction at secondary-post-secondary institutions in northwest New Mexico. Although several similar efforts had been held earlier, initiated by San Juan College, this conference demonstrated several firsts: 1) extensive representation and involvement by the business community; 2) support from the Commission on Higher Education and the New Mexico Department of Education; and 3) corporate sponsorship by US West. The Conference resulted in a series of recommendation and action plans, all designed to improve the articulation of student preparation for college in the academic areas of Mathematics and Language Arts.

During the three-day series of conference activities, several strong impressions developed around the topic of instructional articulation. One is a continuing, strong sense of isolation felt by instructors at both secondary and postsecondary levels, whether between colleagues or between schools. A positive outcome of the conference, noted by many, was the opportunity to share ideas with each other. Another impression was the perceived need for collaboration not only among disciplines but between disciplines. This conception appears to be consistent with the strong interdisciplinary orientation present in the Re:Learning project discussed at the conference. A final impression emerging during the conference was a strong interest on the part of public school and community college staffs for more involvement by the business community.

The conference ended late Saturday morning on a positive note when many participants agreed that future conferences and other related activities were a "must" in furthering regional articulation.

NORTHWEST NEW MEXICO REGIONAL ARTICULATION CONFERENCE

ACTION PLAN

<u>Activity</u>	<u>Completion Time Frame</u>	<u>Assignment</u>
1. Conduct English & Math Educator Forums	Spring, 1991 (English) (Math)	
2. Conduct One Day Grant Writing Workshop	Late January, 1991	Dr. Jim Miller Farmington Schools
3. Plan and Conduct Second Annual Articulation Conference	November, 1991	
4. Establish Math Resource at SJC for Math Teachers	By May, 1991	
5. Establish Resource Bank for English Teachers	By Spring, 1991	
6. Approach Farmington Chamber of Commerce Education Committee for Sustained Mini-grant Funding		
7. Continue Business Community Dialogue		

FORGING LINKS FOR THE FUTURE
THE NORTHWEST REGIONAL ARTICULATION CONFERENCE

Success in high school, success in college, success in the world of work. The relationship among these goals was the subject of a three-day conference in November, 1990 at San Juan College in Farmington, New Mexico.

Representatives of area public school districts, post-secondary institutions, and area businesses gathered to discuss the current state of academic preparation for college and for work. Each school was represented by a team consisting of a counselor or administrator, an English teacher, and a Mathematics teacher. The group--70 persons representing 11 public high schools, 4 post-secondary institutions and 6 businesses, plus the New Mexico Department of Education and the Commission on Higher Education--engaged in a structured dialogue on ways to improve and coordinate academic preparation, particularly in English and Math.

The conference was sponsored by US West Communications, the New Mexico Commission on Higher Education, and the New Mexico Department of Education, with financial support by the US West Foundation. The meeting was co-hosted by San Juan College and Farmington Municipal Schools. Participants were welcomed by Dr. James Henderson, President of San Juan College, Barbara Armbruster of Farmington Municipal Schools, and Marjorie Black, Conference Coordinator.

Duffy Swan, New Mexico Vice-President and Chief Executive Officer of US West, keynoted the conference, telling educators that business is vitally interested in education because of a pervasive interest in the quality of life of its employees and customers, and because "the economy is driven by education."

Today's jobs, Swan said, require higher skills and continual retraining. As the United States finds itself in an increasingly competitive global economy, business looks to educators to provide a capable, well prepared work force. "If you fail," Swan told the group, "we fail."

A business-education panel set the dialogue in motion, challenging participants to think broadly about the preparation students need for success in life and work. Panel members were Dr. Mark Bauer, Chairman of the Math-Science Department at Navajo Community College in Shiprock, Dr. John Turner, Director of Instruction at the Central Consolidated School District, and Paul Aragon, General Manager of Holiday Inn in Farmington.

Bauer highlighted existing links between secondary schools and colleges:

- Testing and guidance programs
- Concurrent enrollment
- Summer "bridge" programs to help students make the transition from high school to college

Bauer also emphasized the importance of continual involvement of business persons in the educational process. In a minority institution like Navajo Community College, minority business owners are not only a credible source of real-world expertise, they also serve as influential role models.

John Turner noted the decline of United States dominance in the international economy -- a decline widely attributed to inadequate preparation. This poses a troubling puzzle for educators at all levels. Turner acknowledged the need for intensified efforts to increase educational effectiveness, but cautioned colleagues to resist the temptation to trivialize education through overemphasis on specific measures like the "minimum competencies."

3.

Turner offered four recommendations:

- Educators must reach a consensus on the high school mission.
- Establish a stable, balanced curriculum. Resist fads.
- Find the time to design and work on the common skills and knowledge that all students need.
- Continue to work on articulation within and beyond the school district, grades K through 14.

Paul Aragon told the group that the greatest concern of business people is that employees lack the ability to communicate effectively, both verbally and in writing. Aragon noted that his company, Holiday Inn, encourages and supports education for its employees.

In a survey of his own employees, Aragon found that employees felt they had received good instruction in school, but they felt ill-prepared for the "real world" expectations of their employer. The employees like opportunities to grow and learn on the job, and they like being encouraged in this by the employer. Aragon said that high school students need strong preparation in the "basics," plus repeated contact with expectations that await them in the real world of work.

Much of the conference was spent in intensive dialogue among educators and business representatives in smaller groups, with designated recorders noting specific observations and recommendations emerging from each group. Math and English teachers enjoyed the opportunity to compare observations and voice common concerns and solutions, as did counselors and administrators.

A lively and intensive exchange among math teachers resulted in the following recommendations:

- Organize a statewide articulation conference for math teachers through the New Mexico Council for Teachers of Mathematics. The conference would be for the purpose of revising state-mandated math competencies and for dialogue with the business community.
- The math skills competencies currently in force should be tested for in the eighth grade, so that teachers may monitor student progress and provide accelerated help earlier.
- Find a way to provide all local schools with access to computer information network systems, which contain many resources that could be helpful to teachers.
- Catalog and make available math teaching resources at a central location. These resources include textbooks, software, and a resource bank of math educators who can provide special expertise.

English Teachers recommended the following:

- Establish an ongoing dialogue on articulation among area educators, grades K through 14, in English and language arts. Such exchanges should occur on school time, as inservice and orientation activities, and as needed. English educators should use this opportunity to develop a resource file of available expertise and classroom success stories. Teachers would also be encouraged to share within and among area schools.
- Identify outside resources. A grant-writing workshop can help English teachers capture resources for their schools. Community businesses are also important resources for teachers.
- Use portfolios to assess language arts competencies of students, in place of the existing "check-off" system for assessment of individual competencies.

5.

Administrators and counselors recommended the following as ways of enhancing articulation among public schools, post-secondary institutions, and the business community:

- Increase business-education dialogue.
- Create ways to introduce students to the real world of work while they are still in school. Summer employment and cooperative education experiences can help accomplish this.
- Anticipate increased opportunities for schools to take part in "distance education," primarily through instructional television. Schools should be identifying gaps in their own curricula that could be filled through the use of a statewide system of distance education.
- Make use of a mentoring system to help "at-risk" students.

Conference workshops also provided information on a number of special topics.

RE:LEARNING is a nationwide program to which a number of states, including New Mexico, have committed. RE:LEARNING does not specify particular methods, but uses a participatory model to help school governing boards, administrators, teachers and students remake the educational system in individual schools, capitalizing on the strengths of the school and its people. Steve Dilg led conference participants in an informational discussion of RE:LEARNING.

CONCURRENT ENROLLMENT denotes a new provision in New Mexico's educational system, which allows junior and senior students in state high schools to take courses from nearby colleges, with such courses fulfilling high school graduation requirements while giving the student a head start in college. Based on a law passed by the New Mexico Legislature, the state Commission on Higher Education has devised a policy on Concurrent Enrollment, which is in early stages of implementation statewide.

6.

Conference participants, led by Dr. Robert Hokom of San Juan College, discussed the positive potential of concurrent enrollment, identified various means for delivery of college instruction to qualified high school students, and noted several concerns about the policy.

A BUSINESS-INDUSTRY workshop, led by Margaret Montoya of US West and Gallup businessman, Ralph Richards, led teachers to consider the differing needs of small and large businesses, with respect to educational preparation of prospective employees.

Farmington School Superintendent, Dr. Jim Miller, led the conference group in a discussion of the document, "ACADEMIC PREPARATION FOR COLLEGE," the result of a 1987 effort to define basic skills competencies for New Mexico high school students anticipating entering college after graduation.

Following a summary session on recommendations offered by the various discussion groups, Bill Simpson of the Commission on Higher Education had the last word, responding to what he had seen in the three days of the Northwest Regional Articulation Conference. Referring to the conference theme, "forging links for the future", Simpson urged participants to maintain the links forged in the conference dialogue. Comparing the chain of articulation to the welded links sometimes used to create a decorative chain, Simpson urged northwest New Mexico educators not to allow the links to become rigid, but to keep them flexible, so that education may respond to coming changes in people, programs, and technology.

Conference organizers plan to follow up with an evaluation of the meeting and an analysis of participant recommendations. Recommendations will be forwarded to appropriate school personnel, state agencies and others for review and implementation.

As participants concluded the three days of information exchange and discussion, many expressed a commitment to continue the exchange with similar meetings within schools, content areas, regions, and the state.

NORTHWEST REGIONAL ARTICULATION CONFERENCE

SAN JUAN COLLEGE
NOVEMBER 8 - 10, 1990

REPORTS FROM ARTICULATION WORKSHOPS

MATHEMATICS

Facilitators - Marv McIntyre - Farmington High School
 Lynn Darragh - San Juan College
Recorder - Vonda Ryan - San Juan College

1. INTRODUCTION OF PARTICIPANTS AND BRIEF DESCRIPTION OF THE PROGRAMS AT INDIVIDUAL SCHOOLS

Each participant was asked to introduce themselves and state a problem which they saw in their schools (addressing articulation). Many of the participants expressed current problems and frustrations in Mathematics Education including increase in course content and requirements, attitudes of students and parents, avoidance of higher levels of Mathematics, and a lack of reasoning and logic skills. Also expressed was a concern for the current state competencies on the secondary level, which do not appear to be functioning as they should, but increase the burden of paperwork for these teachers.

2. PROBLEMS AND CONCERNS IN ARTICULATION

The problems expressed which dealt with articulation included the transferability of credits between secondary and post-secondary levels. The increase in content has created a problem in trying to decide the most important concepts, therefore causing a wider gap in what is taught in the various institutions (even under the same course descriptions). This problem affects student transfer horizontally and vertically, and it appears there needs to be better communication between the institutions to affect a change, at the instructor level.

The second concern expressed was a lack of knowledge regarding the grants and resources available to the schools. In higher education, Mathematics tends to be a support department and all areas cannot be serviced in the few hours with students. Many institutions at all levels are far behind the current technology with an inability to improve the quality of the education provided and to the businesses who hire the students. Although many of the teachers are aware of the technological changes and the needs of the students, many feel they must go outside of the institution to seek funding for the technology. The time to work on these projects is not currently provided or supported.

Another concern in the area of Mathematics was the ability to maintain the articulation goals while keeping abreast of the changing technology. As some institutions are provided more funding in the Mathematics area while others are not, the problem of articulation and the changing technology could drastically affect many institutions by further widening the gap in the quality of the education provided.

Finally, many expressed a concern for the curriculum and the methods of teaching Mathematics. There appears to be a lack of practical logic and problem solving skills, group or collaborative skills, and making the curriculum reflect application in real life.

3. SHORT DISCUSSION OF CURRENT RESOURCES

Participants shared some of the current programs which have been initiated in New Mexico. Among the resources discussed was the participation of the New Mexico Council of Teachers of Mathematics and the Mathematical Association of America at the regional and local level (as well as other professional organizations), the programs for students such as the JUMP and MESA programs, and the technology networks (NEDCOMM, TECHNET, CISCONET, etc.) which are currently on line although most schools do not have the technology to support it.

4. INITIAL RECOMMENDATIONS

- a. Networking of the available resources - seek funding for the equipment to provide networking capabilities
- b. More opportunities for educators to observe other working programs and the current technology
- c. Centrally located and coordinated effort to collect information and provide access to educators
- d. More classroom visitation and information from business people
- e. Offer continuing mathematics courses for all educators
- f. Support for innovation in mathematics education and team teaching
- g. Re-working of the state competencies, done in a cooperative effort with the mathematics teachers
- h. Continuation of the articulation dialogue in mathematics - more frequently and of longer duration, and the support in time and finances to continue and not let it die

5. FINAL RECOMMENDATIONS

After discussions on the other topics and time to consider the initial recommendations, the mathematics people revised these concepts into the following final recommendations.

I. State-Wide Articulation Conference

- a) Include all professional organizations (NMCTM, NM Math Coalition, Four Corners Council, etc.) and representatives of all institutions as well as state departments and CHE to align the revision of curriculum and competencies with the national thought for three tracks: college bound and non-college bound and higher education
- b) Continued dialogue with the Chambers of Commerce, Visiting Scientists, Business people, etc. for continued awareness of Mathematics Education concerns

It was felt the dialogue should continue amongst educators, administrations, boards of education, professional organizations, and business people for the common goal of the improvement of Mathematics Education in New Mexico.

II. Present Mathematics Competencies

To be given in the 8th grade, not to be allowed to attend high school without them (parents should have to sign a waiver if they force social promotion), to be supported at the state level through legislation and/or payment for summer remedial courses.

Better guidelines for college entrance: critical skills communicated to all concerned - include in the JUMP program a statement to parents concerning retention when students skip years in mathematics.

III. Network Capability for All Local Schools

Write proposals for the funding of the hardware and software for network capability for all schools in this county - a small interested group was formed to discuss this further.

Also to be included is the instruction and demonstration of the use of the current network technology and electronic mail (TECHNET, NEDCOMM, CISCONET, etc.) many of which are free to schools with hardware compatability.

IV. Mathematics Education Resource Center

Centralized resource center for mathematics educators, to include:

- A. software (public domain or site examination)
- B. networking capabilities
- C. encyclopedia of shareware
- D. current textbooks
- E. curriculum guides
- F. manipulatives
- G. resource of local educators and others with particular expertise
- H. other applicable resources

Other local projects which could be facilitated through the center:

- A. conducting workshops/lectures/lessons
- B. update and facilitate current technology
- C. catalog all available resources
- D. provide preview of materials and software
- E. sharing and innovation in mathematics education in this area
- F. tutoring in mathematics

It was proposed San Juan College begin cataloging the available resources as soon as possible, with possible support from each institution and the initiation of grant writing.

LANGUAGE ARTS

Facilitators - Sammye Waldrop - Farmington High School
Vicki Holmsten - San Juan College
Recorder - Mitzi McCoy - San Juan College

1. INTRODUCTION OF PARTICIPANTS AND BRIEF DESCRIPTION OF THE PROGRAMS AT INDIVIDUAL SCHOOLS

The Language Arts session was built around informal sharing between secondary and post-secondary instructors. Each high school described its language arts program which most often consisted of basic skills classes, "regular" classes and honors classes. Several of the high schools also have Advanced Placement classes for seniors only. Discussion centered on curriculum within each level and the differences in instruction between the levels.

The colleges present then discussed their writing programs--both sequence and philosophy. Discussion focused on college expectations of high school students. For example, high school instructors were interested in college instructors' perspective on the importance of high school students writing a traditional research paper.

The session ended with an explanation and discussion of the state language arts competencies and how these competencies are measured and documented.

ADMINISTRATION/COUNSELORS

Facilitators - Al Garcia - Navajo Community College
Ken Kernagis - San Juan College
Recorder - Mary Jo Clark - San Juan College

1. Problems transferring course credits at many levels including:

- * Across state lines
- * From two-year to four-year institutions in New Mexico
- * From high school to college
- * From high school or college to meet the needs of businesses and industries
- * Life experience credit

The college provides counseling and assistance in how to apply high school credits to college requirements, how to plan transfer to a four-year institution, skills for college work, career counseling and local job opportunities, job retraining and preparing for a new career. The "Choices that Count" brochure of high school courses recommended for various college curricula was especially noted.

Special frustration was voiced regarding the lack of junior-senior level courses available in the Four Corners area. It was noted that increasingly, employers are turning to a good solid two-year associate degree program as the training of choice.

We need to get students planning for college in the early elementary grades and at least by middle school. High mobility of the population makes it difficult for 8th graders to carry out their plans of a four-year high school program. Native Americans tend to be more successful if they go from high school to a community college and then to a four-year university, with less severe adjustment problems at each level.

2. How can public schools better prepare students to continue into higher education?

- * Bring business people into the schools
- * Increase student awareness of educational and job opportunities
- * Reward teachers and counselors who take steps to increase student awareness of jobs and college
- * Boards and administrators need to provide resources to support these activities
- * Encourage and support more conversations, such as this conference, among representatives from schools, colleges, and employers
- * Encourage entrepreneurial opportunities and co-op education
- * Put more emphasis in the schools on written and oral expression
- * Need a summer work/study program for high school students, providing practical experience in the world of work
- * Encourage and expand the 2+2 and principles of technology programs
- * Find new ways of using distance learning, perhaps through statewide educational television
- * Remember the critical importance of a teacher or counselor or other adult as an educational mentor for every student
- * Teachers need to know more about employer needs; field trips, workshops, and summer employment are important for them too.

REPORTS FROM CONCURRENT WORKSHOPS

RE:LEARNING

Facilitator - Steve Dilg - Capshaw Middle School - Santa Fe
Recorder - Mary Jo Clark - San Juan College

Steven Dilg, principal of Capshaw Middle School in Santa Fe which is a Re:Learning school in the New Mexico program, reported on Re:Learning.

The Re:Learning program is designed to re-think the purpose of education; it is a restructuring effort by schools that apply to participate in the program. The goal is to identify a few essential questions, develop a thematic approach to curriculum, and get students to think rather than just listen or memorize. Every school is different, but all use nine common principles to build unique strengths. Students are seen as workers and teachers are seen as coaches.

Currently, 36 schools in New Mexico are involved in Re:Learning, supported by an allocation of \$750,000 per year from the state. Mr. Dilg shared with the group several handouts as examples of the way in which his school is organized, sample thematic curriculum units, how they develop and review portfolios of student competencies, and the essential elements of their programs.

CONCURRENT ENROLLMENT

Facilitator - Bob Hokom - San Juan College
Recorder - David Caffey - San Juan College

The curricular choices were:

- * Math for Electronics
- * Freshman English
- * Vocation-Technical courses
- * "Advanced Placement-type" courses

Delivery methods:

- * Transport high school students to the college campus (time and cost concerns, sociological concerns)
- * Offer live course on high school campus
- * Participate in telecourse on high school campus
- * Use high school campus as site for a course other community members can also take
- * Delayed play of recorded video on high school campus

Benefits:

- * May help bridge high school-college transition for capable at-risk students
- * Could open up many opportunities for qualified high school students

Concerns:

- * Might decimate high school junior and senior programs
- * Threat to existing advanced placement classes
- * Could take student leaders out of campus environment
- * Could lead to elimination of high school teaching positions
- * High school teachers better equipped to teach the younger student
- * College credibility/image may suffer if perceived as not really advanced learning institution

BUSINESS/INDUSTRY

Facilitator - Margaret Montoya - US West Communications

Facilitator - Ralph Richards - Gallup Chamber of Commerce

Recorder - Mary Jo Clark - San Juan College

How can business and industry contribute to education? Several participants noted that they were small employers hiring mostly high school graduates or drop-outs and without resources to train or re-train employees. In contrast, US West employs only applicants with a high school degree or GED, and has adopted several programs with schools such as adopt-a-school, the "choices" program, and a summer program for high school at-risk youth.

Several recommendations were suggested:

- * Provide on-site employment observation and experience for high school students, perhaps built into their communications classes
- * Increase employer presentations to students in school, either in person or with videos
- * Ask Chambers of Commerce to draw up lists of available speakers concerning the real world of work
- * Provide training for teachers regarding the current and future needs of businesses, such as:
 - summer employment grants for first-hand participation
 - interested faculty negotiate a summer employment contract with a business of interest
 - workshops for teachers to better understand skill levels needed by employers.

THE NORTHWEST REGIONAL ARTICULATION CONFERENCE

SUMMARY OF ACADEMIC PREPARATION FOR COLLEGE

A brief presentation was made Saturday morning about the 1987 Academic Preparation for College developed by CHE/SDE. Discussion around the document concluded:

1. Since 1987, Mathematics standards from NCTM have changed a great deal. Consequently, public school state standards need substantial revision in the near future.
2. English standards have remained pretty much the same during the same time period. Recommendations made in the Academic Preparation document are still valid, i.e. application of new technology (word processing) to the writing process.
3. There was no sentiment in the group to initiate at the State level to revise the Academic Preparation document. The need does continue to exist for strong leadership at all levels to implement the original initiatives identified in the 1987 document.

PROPOSALS

PROPOSALS FOR MINI GRANTS

Participants were invited to submit ideas for continuing the articulation efforts within their own school districts. Ten proposals were submitted from six high schools and three post-secondary institutions. The committee decided to provide \$100 seed money for each proposal submitted.

THOREAU HIGH SCHOOL

Counselor will contact the Chamber of Commerce for speakers from business and industry. Teachers will arrange for five speakers to come to the high school and speak with students.

AZTEC HIGH SCHOOL

The Real World Experience project will target at risk students, especially students with below average scores and achievement in Mathematics and Language Arts. They will spend one full day working at a selected job site and write about the experience or give a short speech to their peers.

BLOOMFIELD HIGH SCHOOL

This project will survey employers to determine their perceptions and concerns of the quality and needs of graduates.

GALLUP HIGH SCHOOL

Educators and the local business community will undertake a cooperative project involving secondary and post-secondary teachers and students.

FARMINGTON HIGH SCHOOL

Business representatives will conduct actual interviews in class. Local businesses will respond to application letters and forms mailed to them. A current video on interview procedures will be purchased.

CROWNPOINT HIGH SCHOOL

A newsletter will be produced by the English-Journalism students covering school news. Community businesses will participate at a later date.

CROWNPOINT INSTITUTE OF TECHNOLOGY

Faculty, Administration and the Catalog Committee will develop a school resume to promote the Institute and the Navajo students to prospective employers around the state and beyond.

UNI-GALLUP BRANCH

A conference to cement the ties between education and businesses in Gallup and determine the training students require for entry level positions will be held. Businesses on the Navajo and Zuni Reservations will also be included.

SAN JUAN COLLEGE

A meeting for faculty of Navajo Community College and San Juan College will be held to continue the dialog of the Articulation Conference. Course syllabi, curriculum materials and teaching ideas will be shared. A central resource facility will be established for all schools in the county involved in Mathematics education.

11/26/90

EVALUATIONS

Evaluations received from the Articulation Conference participants were enthusiastically positive. Each workshop was evaluated as well as the overall conference itself.

A majority of the responses indicated that the articulation effort must be continued. Faculty supported the opportunity to meet with others in their field as well as administrators, counselors and representatives of business and industry.

There were many positive responses to the workshops. Faculty especially enjoyed the workshops in which the specific subjects of Mathematics and English were the focus, but enjoyed hearing about the other topics as well.

Responses to the question "What did you like most about the conference?" included:

- "Interaction among others in our District."
- "Involvement of business and community representatives"
- "Hearing what my colleagues are doing"
- "The chance to talk seriously about articulation"
- "Having a mixture of Administration, Counseling, and Faculty is very beneficial"
- "Open discussion between business and education. I did gather many ideas"
- "The opportunity to talk!"
- "We have had an excellent opportunity to communicate with business and post-secondary people. We all needed this."
- "Being able to share ideas. This must continue"
- "A real attempt at improvement of Math education"

Suggestions for improvement included:

- Need more business and industry representation
- Need more time to develop solutions
- Need more time for workshops and group meetings
- Invite Board members
- Need more initial explanation to fit parts into conference purpose

The Planning Committee met following the Conference to evaluate the activities and suggest ways to continue the articulation dialog. The following action plan was approved by the Committee as a means of continuing the articulation dialog.

ACTION PLAN FOR ARTICULATION

Grant Writing Workshop	January 1991
Articulation Conference Math and English	Spring 1991
Articulation Conference Math and English	Fall 1991
Establishment of a Resource Center for Math	

FRIDAY, NOVEMBER 9, 1990

8:00 AM COFFEE AND ROLLS SUNS DINING ROOM

8:30 AM WELCOME AND OVERVIEW
OF THE CONFERENCE **MARJORIE BLACK**

9:00 AM PANEL-- LEARNING LINKS:
PREPARING STUDENTS FOR
LIFE AND WORK

SECONDARY **JOHN TURNER**
CENTRAL SCHOOL DISTRICT
POST-SECONDARY **MARK BAUER**
NAVAJO COMMUNITY COLLEGE
BUSINESS/INDUSTRY **PAUL ARAGON**
HOLIDAY INN

10:15 AM BREAK

10:30 AM ARTICULATION WORKSHOPS--

MATHEMATICS **ROOM 1008**
MARV McINTYRE FACILITATOR
LYNN DARRAGH FACILITATOR
VONDA RYAN RECORDER

LANGUAGE ARTS **ROOM 1010**
SAMMYE WALDROP FACILITATOR
VICKI HOLMSTEN FACILITATOR
MITZI McCOY RECORDER

ADMINISTRATION/
COUNSELORS **ROOM 1012**
AL GARCIA FACILITATOR
KEN KERNAGIS FACILITATOR
MARY JO CLARK RECORDER

12:00 NOON

LUNCH

SUNS DINING ROOM

MUSIC -

SAN JUAN COLLEGE JAZZ ENSEMBLE

CONCURRENT WORKSHOPS

BLUE - **ROOM 1008**
RED - **ROOM 1010**
YELLOW - **ROOM 1012**

1:00 - 1:45 PM

WORKSHOP I

2:00 - 2:45 PM

WORKSHOP II

3:00 - 3:45 PM

WORKSHOP III

RE:LEARNING
STEVE DILG
MARY JO CLARK

FACILITATOR
RECORDER

CONCURRENT ENROLLMENT

BOB HOKOM
DAVID CAFFEY

FACILITATOR
RECORDER

BUSINESS/INDUSTRY

MARGARET MONTOYA
RALPH RICHARDS
DOLORES PIGFORD

FACILITATOR
FACILITATOR
RECORDER

4:00 PM

SCHOOL TEAM PROJECTS - SUNS

5:00 PM

SOCIAL

**NORTHWEST REGIONAL ARTICULATION CONFERENCE
NOVEMBER 8-10, 1990**

SAN JUAN COLLEGE REPRESENTATIVES

1. Marjorie Black
San Juan College
2. Dr. James Henderson
San Juan College
3. Dr. David Caffey
SJC - Ext. 217
4. Mitzi McCoy
SJC - Ext. 234
5. Dr. Bob Hokom
SJC - Ext. 213
6. Vicki Holmsten
SJC - Ext. 290
7. Lynn Darragh
SJC - Ext. 278.
8. Ken Kernagis
San Juan College
9. Mary Jo Clark
San Juan College
10. Gerald Nix
San Juan College
11. Vonda Ryan
San Juan College
12. Kathleen Foutz
San Juan College
13. Bill Chagnon
San Juan College
14. Harold Tso
San Juan College

FARMINGTON PUBLIC SCHOOLS

15. Dr. Jim Miller, Superintendent
Farmington Public Schools
P. O. Box 5850
2001 N. Dustin
Farmington, NM 87499

16. Ms. Barbara Armbruster
701 W. 31st
Farmington, NM 87401

US WEST REPRESENTATIVES

17. Mr. Frank Reed
US West Communications
411 N. Allen
Farmington, NM 87401
18. Ms. Margaret A. Montoya
Staff Manager
U S WEST Communications
201 3rd Street NW Station 1205
P. O. Box 1355
Albuquerque, NM 87103
19. Mr. Duffy Swan
U S WEST Communications
201 3rd Street NW Station 1205
P. O. Box 1355
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CHE REPRESENTATIVE

20. Bill Simpson
Commission on Higher Education
1068 Cerrillos Road
Santa Fe, NM 87501

STATE OF NEW MEXICO EDUCATION DEPARTMENT

21. Jim Abram
Language Arts Consultant
New Mexico Department of Education
De Vargas & Don Gaspar Streets
Santa Fe, NM 87501-2786

UNM - GALLUP BRANCH

22. Dr. Hendrik C. (Hank) de Bruin
Associate Director for Instruction
UNM - Gallup Branch
200 College Road
Gallup, NM 87301
23. Dr. Gloria Dye
UNM Gallup
24. Dr. Val Shirley
UNM - Gallup

25. Ray Boucher, President
New Mexico Council of Teachers-Math
506 Danita Circle
Gallup, NM 87301

CROWNPOINT INSTITUTE OF TECHNOLOGY

26. Kevin McCormack - Math
Crownpoint Institute of Technology
27. Shirl Roper-Hardman - Adm/Couns
Crownpoint Institute of Technology
28. Naomi Martin - Language Arts
Crownpoint Institute of Technology

NAVAJO COMMUNITY COLLEGE

29. Dr. Mark Bauer
Navajo Community College
PO Box 580
Shiprock, NM 87420
30. Al Garcia
Navajo Community College
1200 Basin Road
Farmington, NM 87401
31. Donna Hansen
Navajo Community College
PO Box 580
Shiprock, NM 87420
32. Larry Prevett - Math/Science
Navajo Community College

NEW MEXICO TECH

33. Debbie Brook
Office of Institutional Development
New Mexico Tech
Socorro, NM 87801
34. Lynn Robertson
Office of Institutional Development
New Mexico Tech
Socorro, NM 87801

AZTEC HIGH SCHOOL

35. Rick Van Sickle
Aztec High
300 Misty Drive
Aztec, NM 87410

36. Ken Marshall
Aztec High
803 Apache
Aztec, NM 87410

37. Joan Haigh
Aztec High

BLOOMFIELD HIGH SCHOOL

38. Dan Lackey - Math
Bloomfield High School
520 N. 1st Street
Bloomfield, NM 87413
39. Jeannie Higgins - English
Bloomfield High School
40. Jim Conyers - Counselor
Bloomfield High School

CROWNPOINT HIGH SCHOOL

41. John Pederson
Crownpoint High School
Crownpoint, NM 87313
42. Frank Farr
Crownpoint High School
Crownpoint, NM 87313
43. Jerry Rowe
Crownpoint High School
Crownpoint, NM 87313

FARMINGTON HIGH SCHOOL

44. Don Seibel
712 Blanco Street
Aztec, NM 87410
45. Pat Peterson
English Dept.
Farmington High School
2200 Sunset
Farmington, NM 87401
46. Marv McIntyre
Farmington High School
2907 Marquette
Farmington, NM 87401

47. Sammie Waldrop
Farmington High School
Box 5894
Farmington, NM 87499

GALLUP HIGH SCHOOL

48. Zane Smith
Gallup High School
P. O. Box 39
Gallup, NM 87305
49. Gary Burright
Gallup High School
P. O. Box 39
Gallup, NM 87305
50. Mike Hazelton
Gallup High School
P. O. Box 39
Gallup, NM 87305

KIRTLAND CENTRAL CONSOLIDATED

51. Dr. John Turner
Kirtland Central Consolidated
558 Rd. 600
Kirtland, NM 87417
52. Bryan Rice
Kirtland Central High School
550 Road 6100
Kirtland, NM 87417
53. Jim Karlin
Kirtland Central High School
550 Road 6100
Kirtland, NM 87417
54. Sharon Brown
Kirtland Central High School
550 Road 6100
Kirtland, NM 87417

NEWCOMB HIGH SCHOOL

55. Bill Nidiffer
P. O. Box 7973
Newcomb, NM 87455
Newcomb High School

56. George Curry - English
Newcomb High School
P. O. Box 7973
Newcomb, NM 87455

57. Crist Peachy - Math
Newcomb High School
P. O. Box 7973
Newcomb, NM 87455

SHIPROCK HIGH SCHOOL

58. Roland Walter
Shiprock High School
Shiprock, NM 87420
59. Dennis Seyfert
45 Rd. 6200 NBU 31
Kirtland, NM 87417
Shiprock High School
60. Janice Kavadas
P. O. Box 1298
Shiprock, NM 87420
Shiprock High School

THOREAU HIGH SCHOOL

61. Janet Carey
Thoreau High School
Thoreau, NM 87323
62. John Carey
Thoreau High School
Thoreau, NM 87323
63. Jim Watkins - Math
Thoreau High School
Thoreau, NM 87323

BUSINESS AND INDUSTRY

64. Ms. Shirley Nelson
Bloomfield Chamber of Commerce
#110 Rd. 5285
Bloomfield, NM 87413
65. Beverly Deswood
Arizona Public Service
PO Box 355 Mail Station 4905
Fruitland, NM 87416
66. Ralph Richards
Gallup Chamber of Commerce
103 W. 66th
Gallup, NM 87301
67. Mr. Jim Gober
Farmington Chamber of Commerce
KWYK FM - 1515 W. Main
Farmington, NM 87401
68. Mr. Paul Aragon, Manager
Holiday Inn
600 E. Broadway
Farmington, NM 87401
69. Mr. Dan Graham
San Juan Economic Development Service
305 S. Oliver
Aztec, NM 87410
70. Steve Dilg
Capshaw Middle School
Santa Fe, NM 87503
989-5438